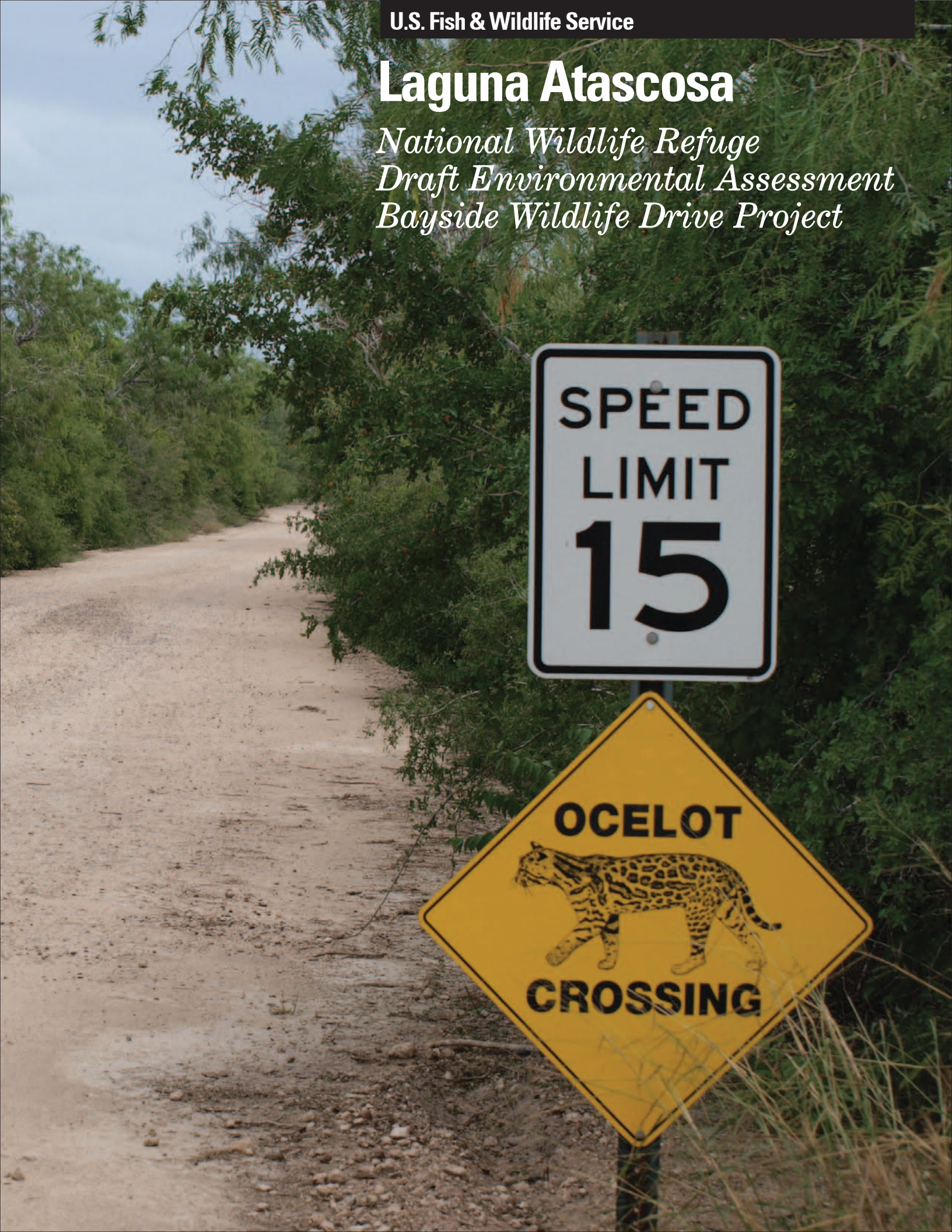
U.S. Fish & Wildlife Service

Laguna Atascosa

National Wildlife Refuge
Draft Environmental Assessment
Bayside Wildlife Drive Project



Draft Environmental Assessment
Bayside Wildlife Drive Project

September 2014

Prepared for—

U.S. Fish and Wildlife Service
Laguna Atascosa National Wildlife Refuge
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Los Fresnos, Texas 78566

and

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1 PURPOSE AND NEED

1.1 Introduction

The U.S. Fish and Wildlife Service (Service) and Laguna Atascosa National Wildlife Refuge (Refuge), in cooperation with the Federal Highway Administration - Central Federal Lands Highway Division (FHWA), are proposing to resurface and widen Bayside Wildlife Drive at the Refuge and create wildlife crossings for the endangered ocelot. The Service is the lead agency for National Environmental Policy Act (NEPA) compliance. This Environmental Assessment (EA) was prepared to evaluate the effects associated with this proposal and complies with NEPA in accordance with Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations (CFR) 1500-1509). NEPA requires examination of the effects of proposed actions on the natural and human environment. In the following chapters, two alternatives are described and the environmental consequences of each alternative are analyzed.

1.2 Location

The Refuge is in Cameron County, Texas, approximately 12 miles northeast of Los Fresnos, 14 miles east of Rio Hondo, and 20 miles north of Brownsville and the border with Mexico (Figure 1). The project area includes Bayside Wildlife Drive; the North Entrance Road and South Entrance Road, providing access to Bayside Wildlife Drive; and the Visitor Center parking area.. The project area's eastern border is the Laguna Madre, which separates the mainland from South Padre Island.

1.3 Background

The Refuge is an important stopover point on the lower Texas coast for migrating waterfowl and neotropical songbirds. An estimated 250,000 migrating ducks can be found on the Refuge and nearby Laguna Madre during peak migration in November. It is estimated that up to 80 percent of the North American population of redhead ducks winter in this area. The Refuge is also home to the endangered aplomado falcon, which was once extirpated in the United States. The opportunity to observe large numbers of birds during migration and see bird species rarely observed north of Mexico draws visitors to the Refuge during fall and spring migration.

The Refuge provides important habitat for the endangered ocelot. Only about 50 of these small cats are estimated to remain in the United States, which includes a population of about 12 at the Refuge. Although habitat loss is the single greatest threat to ocelots, an estimated 40 percent of Refuge ocelots studied over the course of 30 years have died as a result of being hit by vehicles. Ocelots often must travel significant distances and cross roads in search of food, shelter, and mates. The Bayside Wildlife Drive area is heavily used by ocelots. Two ocelots are known to have been killed by vehicles on Bayside Wildlife Drive and a third was killed on Buena Vista Drive approximately 0.25 mile away. Two of these ocelot fatalities occurred within the past eight years.

Concerns about the effects of traffic on ocelots prompted the Service to close Bayside Wildlife Drive to private vehicles in 2013. Currently, Bayside Wildlife Drive is open to bicycles and hikers. The Refuge also operates a twice-daily tram that provides public access.

Figure 1. Project Location

1.4 Purpose of Action

The purpose of the proposed project is to reduce the risk to ocelots from vehicle collisions, while allowing visitor access to the Refuge via Bayside Wildlife Drive by private vehicles. The proposed project also would implement measures to reduce maintenance requirements and costs and extend the useful life of Bayside Wildlife Drive.

1.5 Need for Action

The proposed project is being considered because of the need to reduce the risk to ocelots from vehicle collisions, while allowing visitors access to the Refuge by vehicles along Bayside Wildlife Drive. The proposed closing of the North Entrance Road and the southern portion of Bayside Wildlife Drive would eliminate vehicle traffic in prime ocelot habitat. Constructing wildlife crossings along the northern portion of Bayside Wildlife Drive would further reduce the risks to ocelots from vehicle collisions. Converting Bayside Wildlife Drive to a two-lane road with two-way traffic is needed because the southern portion of the road would be closed. Resurfacing Bayside Wildlife Drive is needed to improve the road, which has deteriorated due to normal wear and tear. Improvements are also needed at Redhead Ridge to meet the demand for increased parking capacity and to provide a vehicle turn-around area.

1.6 Decision to be Made

This EA is an evaluation of the environmental impacts of the alternatives and provides information to help the Service fully consider these impacts and any proposed mitigation. Using the analysis in this EA, the Service will decide if any significant effects associated with the alternatives would require the preparation of an environmental impact statement or whether the proposed project can proceed.

1.7 Regulatory Compliance

The National Wildlife Refuge System (NWRS) Improvement Act of 1997 (the Act) provides guidelines and directives for the administration and management of all areas in the NWRS. The Act states that national wildlife refuges must be protected from incompatible or harmful human activities to ensure that Americans can enjoy NWRS lands and waters. Before activities or uses are allowed on a national wildlife refuge, the uses must be found to be compatible. A compatible use "… will not materially interfere with or detract from the fulfillment of the mission of the Refuge System or the purposes of the refuges." In addition, "wildlife-dependent recreational uses may be authorized on a refuge when they are compatible and not inconsistent with public safety." The Act also recognized that wildlife-dependent recreational uses involving hunting, fishing, wildlife observation, photography, environmental education, and interpretation, when determined to be compatible with the mission of the System and purposes of the Refuges, are legitimate and appropriate public uses of the NWRS and they shall receive priority consideration in planning and management.

This EA was prepared by the Service and represents compliance with applicable federal statutes, regulations, executive orders, and other compliance documents, including the following:

- Administrative Procedures Act, as amended (5 United States Code (USC) 551-559, 701-706, and 801-808)
- American Indian Religious Freedom Act of 1978 (42 USC 1996)

- Antiquities Act of 1906 (16 USC 431-433)
- Archaeological Resources Protection Act of 1979 (16 USC 470)
- Bald and Golden Eagle Protection Act, as amended (16 USC 668-668d)
- Clean Air Act of 1972, as amended (42 USC 7401 et seq.)
- Clean Water Act (CWA) of 1972, as amended (33 USC 1251 et seq.)
- Endangered Species Act (ESA) of 1973, as amended (16 USC 1531 et seq.)
- Executive Order 12898, Federal Action Alternatives to Address Environmental Justice in Minority Populations and Low Income Populations, 1994
- Executive Order 13112, Invasive Species (issued in February 1999)
- Fish and Wildlife Coordination Act of 1958, as amended (16 USC 661 et seq.)
- Fish and Wildlife Improvement Act of 1978 (16 USC 7421)
- Floodplain Management (Executive Order 11988)
- Migratory Bird Treaty Act, as amended (16 USC 703-712)
- National Refuge System Administration Act of 1966, as amended (16 USC 668dd-668ee)
- National Environmental Policy Act (NEPA) of 1969, as amended (42 USC 4321 et seq.)
- Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500 et seq.)
- National Historic Preservation Act (NHPA) of 1966, as amended (16 USC 470 et seq.)
- Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001 et seq.)
- Protection and Enhancement of the Cultural Environment (Executive Order 11593)
- Protection of Wetlands (Executive Order 11990)
- National Pollutant Discharge Elimination System, as amended (33 USC 1251 et seq.)
- Soil and Water Conservation Act of 1977, as amended (16 USC 2001-2009)

Further, this EA reflects compliance with applicable State of Texas and local regulations, statutes, policies, and standards for conserving the environment and environmental resources such as water and air quality, endangered plants and animals, and cultural resources. A CWA Section 404 permit will be required for the project, in addition to consultation under Section 7 of the ESA, and coordination with the State Historic Preservation Office (SHPO) for impacts on cultural resources.

1.8 Scoping and Public Involvement

Scoping is an early and open process to determine the issues and alternatives to be addressed in an EA. Refuge staff and the FHWA conducted an internal interdisciplinary scoping process to define the purpose and need, identify potential actions to address the need, and determine the likely issues and impact topics.

On April 2, 2014, the Refuge initiated public scoping with a press release to provide the public and interested parties an opportunity to comment on the proposed project (Appendix A). The Refuge sent approximately 260 letters to interested individuals; organizations; state, county, and local governments; federal agencies; local businesses; and media outlets describing the proposed project and asking for comments. The Refuge hosted an open house meeting on April 16, 2014 at the Harlingen Cultural Arts Center to inform the public about the proposed project and receive written suggestions, comments, and concerns regarding the project.

The Refuge received 37 written comments from the public during the April 2 to May 3, 2014 comment period. Primary issues of concern identified during scoping included concern for wildlife being struck by vehicles if the Bayside Wildlife Drive is reopened to private vehicles, safety concerns, and desire for more public access.

The public, agencies, and American Indian groups traditionally associated with the lands of the Refuge will also have an opportunity to review and comment on this EA. Internal and external scoping comments were considered in the choice of impact topics and were used in the development and evaluation of alternatives discussed in this EA. Scoping issues or impact topics that were considered, but not evaluated further, are discussed below in "Impact Topics Dismissed from Further Consideration." Additional information on consultation and coordination is found in Chapter 4 – *Consultation and Coordination*.

1.9 Issues and Impact Topics

During consideration of the proposed project, the Refuge and FHWA conducted internal and external agency and public scoping to determine the issues relevant to the proposed project. Below is a summary of impact topics identified for further analysis in Chapter 3 – *Affected Environment and Environmental Consequences* and those topics considered but excluded from further analysis.

1.9.1 Impact Topics Retained for Further Analysis

The following impact topics were identified in scoping for further analysis in the EA: floodplains; vegetation and wetlands; wildlife; threatened, endangered, and special status species; and visitor services/activities. These topics are addressed below under Chapter 3 – *Affected Environment and Environmental Consequences*.

1.9.2 Impact Topics Dismissed from Further Analysis

Air Quality

The project area has excellent air quality due to the rural land uses in most of the surrounding area. The project area is located in Cameron County, which is in an area in attainment or unclassifiable for all National Ambient Air Quality Standards. Mobile source emissions in the Refuge include motor vehicles (which affect air quality through the production of particulate matter), sulfur dioxide, nitrogen oxides, carbon monoxide, and volatile organic compounds. Vehicle emissions occur from both Service-operated vehicles and visitor vehicles.

Road rehabilitation and widening would require use of heavy equipment and vehicles to deliver construction materials and transport construction personnel to the site. Ground disturbance would increase the potential for generating dust. Earthwork, equipment, and hauling material during construction would temporarily increase dust and vehicle emissions. Based on the limited emissions from a small number of vehicles in comparison with the number of vehicles operating in the Refuge yearly, impacts on air quality would be negligible and within federal and state standards. Reopening Bayside Wildlife Drive would allow visitors to drive to parts of the Refuge that were closed in 2013, resulting in an increase in traffic and vehicle emissions over the long term. Overall, Refuge air quality and regional air quality would be negligibly affected by the short-term increase in emissions during construction and long-term increase in emissions

following construction. Because impacts on air quality would be negligible, this topic was dismissed from further consideration in this EA.

Soils/Geology

Road rehabilitation and widening would occur primarily within the existing road prism, with minimal changes in topography other than a rise in the elevation in a 0.24-mile section of road to construct the wildlife crossings and earthwork at the Redhead Ridge parking area. Permanent disturbances associated with widening the road and constructing the turnaround would impact approximately 7.62 acres. The planned use of temporary and permanent erosion-control best management practices (BMPs), including revegetation of temporary disturbances, would reduce the potential for erosion and soil loss. Because soil and geology impacts would be minor or less, this impact topic was dismissed from further analysis in this EA.

Prime or Unique Farmland

In 1980, the CEQ directed federal agencies to assess the effects of their actions on farmland soils classified as prime or unique by the United States Department of Agriculture, Natural Resources Conservation Service. Prime or unique farmland is defined as soil that particularly produces general crops such as common foods, forage, fiber, and oil seed; and specialty crops such as fruits, vegetables, and nuts. Both categories require that the land be available for farming uses. Lands within the project area are not available for farming and, therefore, do not meet the definition. Thus, prime or unique farmland was dismissed as an impact topic in this EA.

Water Resources

Water resources in the Refuge include marine waters, fresh water, and brackish waters. The Refuge is within the Arroyo Colorado Watershed, which has been degraded over time through chemical pollution and other contaminants. Stover Cove and Pelican Lake are surface water bodies within or near the project area. The Laguna Madre borders the project area to the east and separates the mainland from South Padre Island. A nearby segment of the Laguna Madre adjacent to the Arroyo Colorado confluence is listed as impaired for elevated bacteria levels on the 2012 303(d) list (Texas Commission on Environmental Quality 2012). Floodplains and wetlands are also present in the project area and were carried forward as impact topics as described below in Chapter 3 – *Affected Environment and Environmental Consequences*.

Road rehabilitation and widening would occur primarily within the existing road prism. No defined streams would be affected because none are present in the flat terrain in the project area. While much of the land bordering Bayside Wildlife Drive is seasonally inundated, the road was constructed on fill material and is rarely flooded. Existing culverts would be extended as necessary to maintain water conveyance under the road. Road widening and constructing the turnaround and expanded parking area at Redhead Ridge would increase impervious surface area by approximately 5.48 acres. Construction-related disturbance has the potential to result in erosion and sediment transport, but with implementation of BMPs, including a storm water pollution prevention plan, impacts on water quality would be local, short-term, and negligible. A Section 401 Tier I Water Quality Certification would be completed and submitted to the U.S. Army Corps of Engineers (Corps) for coordination with the Texas Commission on Environmental Quality.

A hazardous spill plan would be required from the contractor prior to the start of construction stating the actions to be taken in the case of a spill and preventive measures to be implemented. Hazardous spill clean-up materials would be on-site at all times. This measure is designed to avoid/minimize the introduction of chemical contaminants associated with machinery (e.g., fuel, oil, and hydraulic fluid) used in project implementation. A rapid response spill kit that includes absorbent pads, drain pans, and dams would be kept at the construction site in case of a major fluid leak. Fueling of all construction equipment would be conducted only in equipment staging areas. Equipment would be checked frequently to identify and repair any petrochemical leaks.

Because impacts on water resources would be negligible, water resources was dismissed as an impact topic in this EA.

Hazardous Materials and Health and Safety

During the early 1940s, parts of the Laguna Atascosa Unit of the Refuge, which includes the project area, were used as a gunnery training range (Laguna Madre Gunnery Range). Aerial gunners for B-17 and B-29 military aircraft trained there, and the Refuge was affected by millions of .30 and .50 caliber machine gun rounds. In 1950, contractors removed 60,380 pounds of machine gun rounds and 3,555 pounds of skeet shot from the area. Spent bullets can still be found near Bayside Wildlife Drive. Remaining bullets may pose a copper, lead, and other contaminants risk to soil, water, migratory birds, and aquatic organisms. No other hazardous materials are known in the project area.

Most project disturbances would occur within the previously disturbed road prism with limited potential for encountering bullets or other existing hazardous material. Contractors would be required to follow standard safety protocols for removal and disposal of any live ammunition discovered during construction. Because health and safety measures would be followed during construction regarding the discovery of any unspent bullets or other hazardous materials, this impact topic was dismissed in this EA.

Cultural Resources

Section 106 of the NHPA of 1966, as amended (16 USC 470 et seq.) and its implementing regulations under 36 CFR 800 require all federal agencies to consider the effects of federal actions on cultural properties eligible for or listed in the National Register of Historic Places. In order for a site to be listed in the National Register, it must have the potential to provide information important to history or prehistory.

Known archaeological, cultural, and historical resources at the Refuge are described in the Refuge's Comprehensive Conservation Plan (Service 2010). During World War II, parts of the Refuge near the project area were used as a gunnery training range. Remnants of World War II structures still exist near the project area. Old storage bunkers, target tracks, and spent bullets can be found near Bayside Wildlife Drive. No other cultural resources are known near the project area.

The Refuge sent a letter requesting clearance for cultural resources to Jeff Durst with the Texas SHPO on April 18, 2014. During a telephone call with the Refuge Deputy Manager on June 5, 2014, Mr. Durst indicated that his office had received the letter, had reviewed it, and had decided

not to respond. In instances where the SHPO chooses not to respond within 30 days after receiving a request for clearance, it is SHPO policy that no clearance is needed for the proposed action, and construction may proceed. Because the SHPO has determined that no clearance is needed, cultural resources was dismissed as an impact topic in this EA.

Socioeconomics

The Refuge is in Cameron County, Texas, approximately 18 miles northeast of the Town of Los Fresnos (population 5,740), 18 miles east of Rio Hondo (population 2,423), 35 miles north of Brownsville (population 180,097), and 27 miles east of Harlingen (population 65,679). The predominant land uses in the vicinity of the Refuge are farming and some oil and gas development. Cameron County is a popular tourist destination, with tourists arriving from the north every winter. The beaches on nearby South Padre Island are a popular tourist destination in the spring and summer. The Refuge averages approximately 350,000 visitors per year, with many visitors coming to observe birds and other wildlife, especially during spring and fall migration. The Refuge also plays a role in the local economy as Refuge employees typically live in the community, own property, and support local businesses through routine purchases.

Implementation of the Proposed Action would result in construction-related spending. Construction expenditures would be used for labor, supplies, equipment, and other services. Labor would likely come from Harlingen, Brownsville, or other nearby communities. Secondary economic effects from construction-related spending also would generate economic benefits to the region. Construction-related spending would have a short-term beneficial effect on the regional economy.

Over the long term, the economic and social conditions of the area would remain the same if the Proposed Action were implemented. The Refuge would continue to be an important tourist attraction in the area. Over the long term, road improvements would provide beneficial economic effects on regional businesses from actions that increase the quality of the visitor experience and support continued visitation to the Refuge. Because impacts on socioeconomics would be minor and beneficial, this topic was dismissed from further evaluation in this EA.

Environmental Justice

Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority and Low-Income Populations; February 11, 1994) was designed to focus the attention of federal agencies on the environmental and human health conditions of minority and low-income populations, with the goal of achieving environmental protection for all communities. The order directed federal agencies to develop environmental justice strategies to aid in identifying and addressing disproportionately high and adverse human health and environmental effects of their programs, policies, and activities on minority and low-income populations. The order is intended to promote nondiscrimination in federal programs substantially affecting human health and the environment, and to provide minority and low-income communities with access to public information and opportunities for participation in matters related to human health and the environment.

Neither of the two alternatives would disproportionately place any adverse environmental, economic, social, or health impacts on minority or low-income populations. Implementation of

the Proposed Action is anticipated to benefit the environment and people in the surrounding communities. Thus, environmental justice was dismissed as an impact topic in this EA.

Visual Resources

The Bayside Wildlife Drive offers unique viewing opportunities of native coastal Texas environments. Most of the western and northern parts of the drive, approximately 6 miles, pass through coastal prairie, with unobstructed long-distance views of native wetlands and prairie, and unique manmade landforms used for World War II artillery training. Approximately 0.5 mile in the northern portion and nearly 4 miles of the southern portion of the drive pass through native brushland composed of very dense, woody vegetation approximately 15 feet high. The high density of the brushland vegetation completely obscures any views beyond the edge of the vegetation near the road's edge. This portion of the Bayside Wildlife Drive has the lowest visual quality visual resources in the project area.

Approximately half of the drive is adjacent to the coastline of the Laguna Madre with unobstructed views in all directions. Views to the east and south are of the shoreline, the open water of the Laguna Madre, South Padre Island and island buildings on the horizon, and the sky. Views to the north are of the shoreline and the Laguna Madre, and views to the west are of the coastal prairie with some isolated areas of native brushland vegetation. This portion of the Bayside Wildlife Drive has the highest quality visual resources in the project area.

Road rehabilitation and widening would not affect existing views. Although the road pavement and vegetation clearing area would be wider than the existing road, foreground, mid-ground, and distant views would be the same as existing views. However, the two proposed wildlife crossing bridges would significantly affect views from the road in the two brushland areas. The raised elevation of the road over the bridges would reduce view distance in both directions along the road and also raise observers in vehicles above the brushland vegetation in some locations. Visual resources in the brushland areas, from the bridges, would be significantly improved by providing unique long-distance views to the Laguna Madre across the brushland vegetation tops and coastal prairie. Therefore, the effects on visual resources from the proposed project would be nonexistent along the Laguna Madre coastline and through the coastal prairie, and negligible through the brushland.

Because the impacts on visual resources would be negligible, this topic was dismissed from further consideration in this EA.

Wilderness

No designated wilderness occurs within the project area. The Proposed Action would not affect wilderness. Thus, wilderness was dismissed as an impact topic in this EA.

2 ALTERNATIVES

2.1 Alternative 1—No Action Alternative

Under the No Action Alternative, current management direction would continue. No modifications would be made to Bayside Wildlife Drive. Bayside Wildlife Drive would continue to be closed to public vehicles and would be open to hiking and biking. The Refuge would continue to offer tram tours. Refuge staff would continue routine road maintenance and repairs

as in the past. No funds would be expended to widen and resurface the road, construct wildlife crossings, or expand parking.

The No Action Alternative provides a basis for comparison with the Proposed Action and the respective environmental consequences. Should the No Action Alternative be selected, the Refuge would respond to future needs and conditions without major actions or changes in the present course.

2.2 Alternative 2—Widen and Reopen a Portion of Bayside Wildlife Drive to Private Vehicles (Proposed Action)

2.2.1 Road Design and Pavement

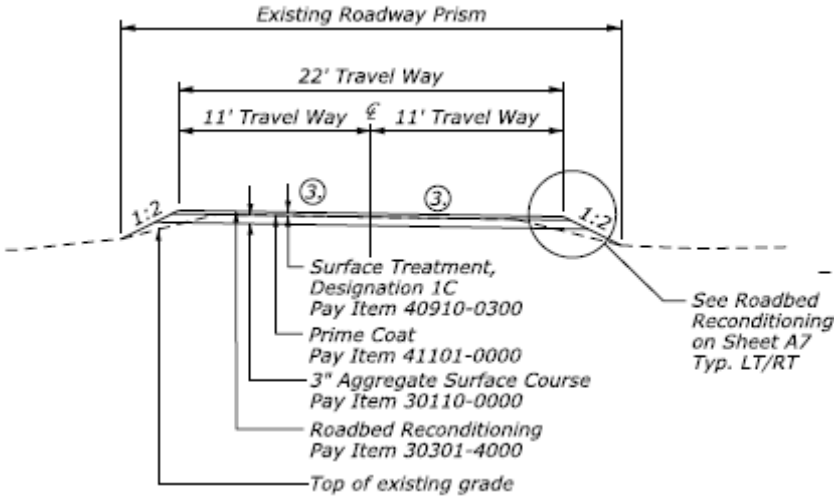
Under Alternative 2, Bayside Wildlife Drive would be widened from one lane to two throughout an 8.2-mile section from the South Entrance Road to the Redhead Ridge parking area (Figure 2). Currently, Bayside Wildlife Drive varies in width from 12 to 22 feet (Figure 3). Road rehabilitation would include repairing soft and unstable areas and reshaping the subgrade surface. Additional aggregate surface course depths would be used to widen the road to two lanes. An oil coat would be used to bind the aggregate together. A chip seal would then be applied to create the road surface. The finished road would be 22 feet wide with two 11-foot lanes, no shoulders, and variable foreslopes (Figure 4).

It is anticipated that most pavement and structural work would be constructed within the existing road prism, which varies from 12 to 22 feet in width at the top and is at least 26 feet wide at the bottom. Vegetation clearing would occur on the existing foreslopes to accommodate the wider road. Vegetation clearing also would occur to accommodate the new larger parking area and turnaround at the Redhead Ridge parking area. Construction would result in permanent impacts to vegetation due to widening the road surface from one lane to two, including 0.46 acre of wetlands, 5.48 acres of mowed grasslands within the road shoulder, and 1.68 acres of brushlands. Temporary impacts would be limited to areas less than 5 feet from the edge of permanent disturbance. Temporarily disturbed areas would be revegetated with native species. Native trees and shrubs would be planted to restore brushland habitat as described below under *Vegetation and Wetlands*.

Figure 2. Alternative 2 – Proposed Action

Figure 3. Bayside Wildlife Drive

Figure 4. Proposed Typical Section for Most Sections of Bayside Wildlife Drive



2.2.2 Parking and Pullouts

A new chip seal and new surface striping would be applied at the Plover Point parking area, Refuge visitor center, and Refuge headquarters. The existing Redhead Ridge parking area (Figure 5) would be enlarged to add 17 parking spaces, including an Americans with Disabilities Act (ADA)-accessible parking space. A 50-foot-radius cul-de-sac would also be constructed just beyond the Redhead Ridge parking area for vehicles to turn around. Expanding the parking area at Redhead Ridge would require excavation and embankment construction, resulting in

approximately 0.97 acre of impacts on vegetation. A new chip seal and new surface striping also would be applied at the Redhead Ridge parking area. The existing bathroom facilities at Redhead Ridge would be maintained. Chip seal also would be applied to existing pullouts along Bayside Wildlife Drive.

Figure 5. Redhead Ridge Parking Area

2.2.3 Drainage

Existing culverts would be lengthened as needed to accommodate road widening. As described above, the existing road prism is wide enough to accommodate the proposed road widening in most places. Permanent and temporary disturbance to the soil surface outside of the existing road pavement from lengthening culverts would be less than 300 square feet.

2.2.4 Miscellaneous Improvements

Vehicle sensors and an automatic gate would be installed at the South Entrance Road. Regulatory and warning signs would be updated and replaced as required to meet visibility standards. The speed limit on Bayside Wildlife Drive would remain 25 mph. Advisory speed limit signs of 15 mph and ocelot crossing signs would be installed at the wildlife crossings. New gates would be installed to prevent access to the closed portion of Bayside Wildlife Drive and the North Entrance Road.

2.2.5 Traffic Control and Scheduling

Bayside Wildlife Drive is currently closed to private vehicles and is open to bicycles and hikers. Guided tours of Bayside Wildlife Drive by tram may be possible during construction at the discretion of the Refuge. In order to protect ocelots, night work would not be allowed.

Access to the visitor center would be maintained during construction. All construction work would be completed in approximately one year. Work is currently scheduled for summer 2016.

The Refuge would implement a number of steps to provide timely and accurate information to Refuge visitors during road rehabilitation to maintain a quality visitor experience. To facilitate visitor planning, the status of roadwork would be advertised two weeks in advance and updated daily. Information on road construction and travel restrictions would be communicated via the Refuge website, newspaper, visitor center, news releases, and social media such as Facebook.

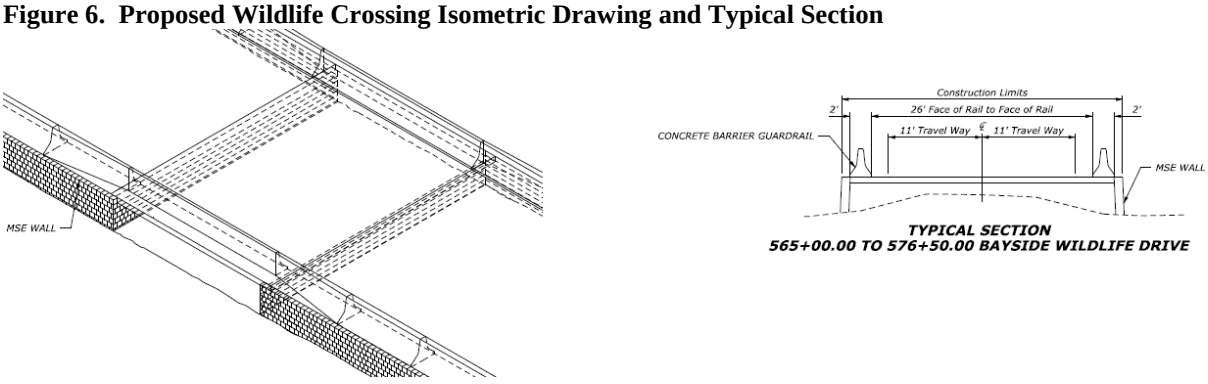
2.2.6 Staging Areas

Temporary staging areas for equipment and supplies during construction would use an existing parking area on North Entrance Road, which is proposed to be closed (Figure 2). No new disturbance would be needed for staging.

2.2.7 Grade-Separated Wildlife Crossings

Two grade-separated crossings would be constructed for wildlife movement in the north section of Bayside Wildlife Drive (Figure 2). The wildlife crossings would be constructed with GRS-IBS (geosynthetic reinforced soil integrated bridge system) bridges (Figure 6). Each crossing would have a minimum opening height of 3.5 feet, and a width of 5 feet or greater. The crossings would be 30 feet long and would have an aspect ratio (height times width divided by length) of at least 0.6. The road surface would be elevated by approximately 4 to 5 feet for a length of about 0.24 mile to allow construction of the wildlife crossings. A mechanically stabilized earth (MSE) retaining wall would be constructed on either side of the road to minimize permanent impacts on wildlife habitat.

Figure 6. Proposed Wildlife Crossing Isometric Drawing and Typical Section



Constructing the wildlife crossings would result in the permanent loss of 0.71 acre of vegetation and temporary disturbance of 1.08 acre of vegetation. Temporary impacts are based on a 5-foot offset from the edge of permanent fill. Temporarily disturbed areas would be replanted with native shrubs following construction.

2.2.8 Changes in Operations

Studies of ocelot movements at the Refuge have shown that ocelots frequently cross the North Entrance Road (Service 2014a). The North Entrance Road would be closed to private vehicles by gates at each end. The North Entrance Road would continue to be maintained for access by Refuge staff and would be open to bicycles and hikers. The South Entrance Road would become

the new access to Bayside Wildlife Drive and would be accessible through an automatic gate with an access code or card reader.

Ocelot research at the Refuge has also shown that ocelots frequently cross Bayside Wildlife Drive in the section between Redhead Ridge and the South Entrance Road (Service 2014a). This section of Bayside Wildlife Drive would be gated and closed to private vehicles to protect ocelots. Bicycles, hikers, Refuge-operated trams, and Refuge staff would continue to have access to the southern portion of the road.

Bayside Wildlife Drive would no longer be a one-lane, one-way loop road that circulates clockwise, and would instead be modified to a two-lane, two-way road with a turnaround provided at the Redhead Ridge parking area. Private vehicles would enter at the South Entrance Road, travel clockwise along the road to Redhead Ridge, turn around at a cul-de-sac at Redhead Ridge, and return to the South Entrance Road.

2.2.9 Resource Protection Measures

The following actions will be implemented to reduce adverse effects to threatened and endangered species, wildlife, and native vegetation:

- Duration of construction will be minimized to reduce impacts to wildlife.
- Construction will only be conducted during daylight hours to reduce chances of affecting ocelots traveling nocturnally.
- Construction will avoid the nesting season for aplomado falcons (March- August).
- If construction will take place during any part of nesting season, the Refuge will ensure that aplomado falcon nest structures will be moved further from the road to prevent disturbance.
- Contractors will be educated on safe speeds for vehicles and ocelot and bobcat identification so they can better be aware of possible ocelot presence and keep mortality and disturbance risks low.
- The Service will monitor ocelot movements using radio telemetry and/or global positioning system (GPS) collars prior to and during the construction phase of this project.
- The construction contractor will be required to walk through the habitat being impacted at the wildlife crossing and ensure that no den site or injured cat is located in that area.
- Construction will remove the minimum amount of brush possible during construction.
- Temporary impacts would be limited to areas less than 5 feet from the edge of permanent disturbance.
- Temporarily disturbed areas will be revegetated with native species. Native trees and shrubs will be planted to restore brushland habitat.

2.3 Alternatives Considered But Dismissed from Detailed Analysis

2.3.1 One-Way Loop with Multiple Grade-Separated Wildlife Crossings

Under this alternative, the South Entrance Road would be improved as a two-way road. Bayside Wildlife Drive would continue to be a one-way road. The North Entrance Road would be closed. Two wildlife crossings would be constructed on the northern section of Bayside Wildlife Drive as described for the Proposes Action. Five or more wildlife crossings (such as box culverts or GRS-IBS bridges) would be constructed along the section of Bayside Wildlife Drive from the Moranco Blanco trailhead to the South Entrance Road. A parking area would be constructed at the Moranco Blanco trailhead. Bayside Wildlife Drive would be opened to private vehicles following completion of the project. This alternative was eliminated because of cost and because closing the southern portion of Bayside Wildlife Drive (a component of the Proposed Action) would better protect the ocelot.

2.3.2 One-Way Loop with At-Grade Wildlife Crossings

This alternative would be the same as the one-way loop with multiple grade-separated crossings, described above, except the crossings in the southern portion of the road would be constructed at grade instead of using culverts or bridges. A series of at-grade wildlife crossings with rumble strips and warning signs would be constructed in the southern portion of the loop between the Moranco Blanco trailhead and the South Entrance Road. Fencing would be used to direct wildlife to the crossings. A parking area would be constructed at the Moranco Blanco trailhead. Bayside Wildlife Drive would be opened to private vehicles following completion of the project. This alternative was eliminated because of concerns that the at-grade crossings would not be successful in eliminating the threat of vehicle collisions with ocelots.

2.3.3 Two-Way Travel on Bayside Wildlife Drive, with Turnaround at Moranco Blanco Trailhead

Under this alternative, the southern portion of Bayside Wildlife Drive would be closed to private vehicles at the Moranco Blanco trailhead. A parking area and turnaround would be constructed at the Moranco Blanco trailhead. The North Entrance Road would be closed. Bayside Wildlife Drive would become a two-way road and would be widened from the South Entrance Road to Plover Point. South of Plover Point, Bayside Wildlife Drive would be a one-lane road with two-way traffic. Turnouts at selected locations would allow vehicles to pass. This alternative was eliminated due to concerns about public safety. In addition, this alternative would result in more wetland impacts than the Proposed Action.

2.3.4 Use Abandoned Road Grade for Access

This alternative considered reconstructing an abandoned road grade between Buena Vista Drive and Bayside Wildlife Drive as the main access to Bayside Wildlife Drive instead of using the existing South Entrance Road. The reopened road would be in prime ocelot habitat and would adversely affect wetlands. This alternative was eliminated due to concerns about impacts on ocelots and wetlands.

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Introduction

This chapter describes the affected environment and discloses the potential environmental consequences associated with implementing the No Action and Proposed Action alternatives described in Chapter 2 – *Alternatives*. Resources evaluated in this chapter include floodplains; vegetation and wetlands; wildlife; threatened, endangered, and special status species; and visitor services and activities.

3.2 General Methods

The No Action Alternative provides a baseline condition, which was used to evaluate the level of potential impacts resulting from implementation of the Proposed Action. The analysis is based on the assumption that the measures identified in this EA would be implemented for the Proposed Action. These impact analyses and conclusions are based on the review of existing literature and studies; information provided by other agencies, professional judgment, and staff insights; site review; and public input.

The following terms are used in the discussion of environmental consequences to assess the impact intensity threshold and the nature of impacts associated with each alternative.

Type: Impacts can be beneficial or adverse (Table 1).

Table 1. Impact Types.

Impact Type	Description
Beneficial	A change resulting from management actions that maintain or enhance the quality or quantity of identified Refuge resources or recreational opportunities.
Adverse	A change resulting from management actions that degrade the quality or quantity of identified Refuge resources or recreational opportunities.

Context: Context is the setting within which an impact would occur, such as local (in the project area) or regional (in Cameron County, Texas, and nearby).

Impact Intensity: The impact intensity for each resource is identified as no impact; or impacts may be negligible, minor, moderate, or major (Table 2).

Table 2. Impact Intensity.

Impact Intensity	Description
No impact	No discernable effect.
Negligible	Effects resulting from management actions that cannot be reasonably expected to affect identified Refuge resources or recreational opportunities at the identified scale.
Minor	Effects resulting from a specified management action that can be reasonably expected to have detectable, though limited, effect on identified Refuge resources or recreational opportunities at the identified scale.
Moderate	Effects resulting from a specified management action that can be reasonably expected to have apparent and detectable effects on identified Refuge resources or recreational opportunities at the identified scale.
Major	Effects resulting from a specified management action that can be reasonably expected to have readily apparent and substantial effects on identified Refuge resources and recreational opportunities at the identified scale.

Duration: For purposes of this analysis, impact duration is described as short-term or long-term. Short-term impacts last no longer than one year after construction. Long-term impacts last more than one year beyond the completion of construction.

Direct and Indirect Impacts: Effects can be direct, indirect, or cumulative. Direct effects are caused by an action and occur at the same time and place as the action. Indirect effects are caused by the action and occur later or farther away, but are still reasonably foreseeable.

Direct and indirect impacts are considered in this analysis, but are not specified in the narratives. Cumulative effects are discussed in the next section.

3.3 Cumulative Effects

Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative effects can result from individually minor, but collectively significant, actions taking place over a period of time. The CEQ regulations that implement NEPA require the assessment of cumulative impacts in the decision-making process for federal projects.

3.3.1 Methods for Assessing Cumulative Effects

Cumulative impacts were determined by combining the impacts of the Proposed Action or No Action Alternative with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other ongoing or reasonably foreseeable future projects near the project area that may contribute to cumulative impacts. The geographic scope of the analysis includes actions in the project area as well as other actions in surrounding lands where overlapping resource impacts are possible. The temporal scope includes projects within a range of approximately 10 years.

Past, present, and reasonably foreseeable actions were assessed in conjunction with the impacts of the alternatives to determine if they would have any added adverse or beneficial effects on a

particular resource. The impacts of reasonably foreseeable actions vary for each of the resources. Cumulative effects are considered for each alternative and are presented in the Environmental Consequences discussion for each impact topic.

3.3.2 Past and Current Actions

Past actions include activities that have influenced and affected the current conditions of the environment near the project area within the past 10 years. Past and current actions in the project area include use of Bayside Wildlife Drive by the public and Refuge staff and routine maintenance of the road. The Refuge sometimes uses prescribed fire, especially in coastal prairie areas, to improve and maintain wildlife habitat. Bayside Wildlife Drive is also used by Service biologists to access the surrounding areas while conducting research and monitoring ocelots and other wildlife.

3.3.3 Future Actions

Past and current actions such as public use, wildlife research and monitoring, prescribed fire, and routine maintenance are expected to continue. No other reasonably foreseeable future actions were identified to occur in or near the project area.

3.4 Floodplains

3.4.1 Affected Environment

Executive Order 11988 seeks to avoid adverse impacts associated with the use and modification of floodplains and to avoid direct or indirect support of floodplain development. This order directs federal agencies to evaluate the potential effects of its actions on floodplains. For actions located in a regulatory floodplain, the agency is required to consider alternatives to avoid adverse effects and incompatible development.

Floodplain mapping in the project area was conducted by the Federal Emergency Management Agency's (FEMA) National Flood Insurance Program. FEMA's Flood Insurance Rate Map panels 4801010175B (updated September 15, 1983) and 4801010200D (updated May 4, 1992) show that portions of the project area are within the 100-year floodplain (Figure 7). The western and northern portions of the project area are within FEMA Zone A, a 100-year floodplain with a base flood elevation of 11 feet; and Zone B, areas between the 100-year and 500-year floodplains and areas subject to a 100-year flood with average depths of less than 1 foot. The section of the project area bordering the Laguna Madre, from Plover Point south, is within FEMA Zone V – an area of 100-year coastal floods with velocity (wave action) and a designated base flood elevation of 13 feet. A short section of the project area north of Redhead Ridge is within an area of minimal flooding, with less than a 500-year flood risk (FEMA Zone C).

Flooding in the project area could range from minor flooding with inundation of low-lying areas to major flooding from hurricanes that can drive storm surge inland. The road surface in most of the project area is approximately 8 to 9 feet above mean sea level. Portions of Bayside Wildlife Drive would be expected to be under up to 2 to 5 feet of water during a 100-year flood event.

3.4.2 Environmental Consequences

Alternative 1 – No Action Alternative

Bayside Wildlife Drive would be subject to periodic flooding, primarily from rainfall events in the flat terrain. The risk for flooding of Bayside Wildlife Drive would not change from existing conditions. The No Action Alternative would have no effect on the floodplain because there would be no change in the movement of floodwater or the ability of the floodplain to convey floodwaters.

Alternative 2 – Proposed Action

Resurfacing and widening Bayside Wildlife Drive would not substantially change the topography or alter the ability to move flood flows. Existing culverts under the road would be lengthened, maintaining drainage from one side of the road to the other. Road widening and construction of the turnaround at Redhead Ridge would result in a net increase in impervious surface area of approximately 5.48 acres. This would slightly decrease the surface area for infiltration of floodwater. Natural drainage patterns would be maintained along Bayside Wildlife Drive. The existing road elevation would be maintained, with the exception of a 0.24-mile section of the road that would be raised by approximately 3 to 4 feet, where the wildlife crossings would be installed. This section of the road is within FEMA Zone B and is above the elevation of the 100-year floodplain. The Refuge would coordinate with the local floodplain administrator, as required. Overall, the project would have a long-term minor adverse effect on the floodplain from the increase in impervious area.

3.4.3 Cumulative Impacts

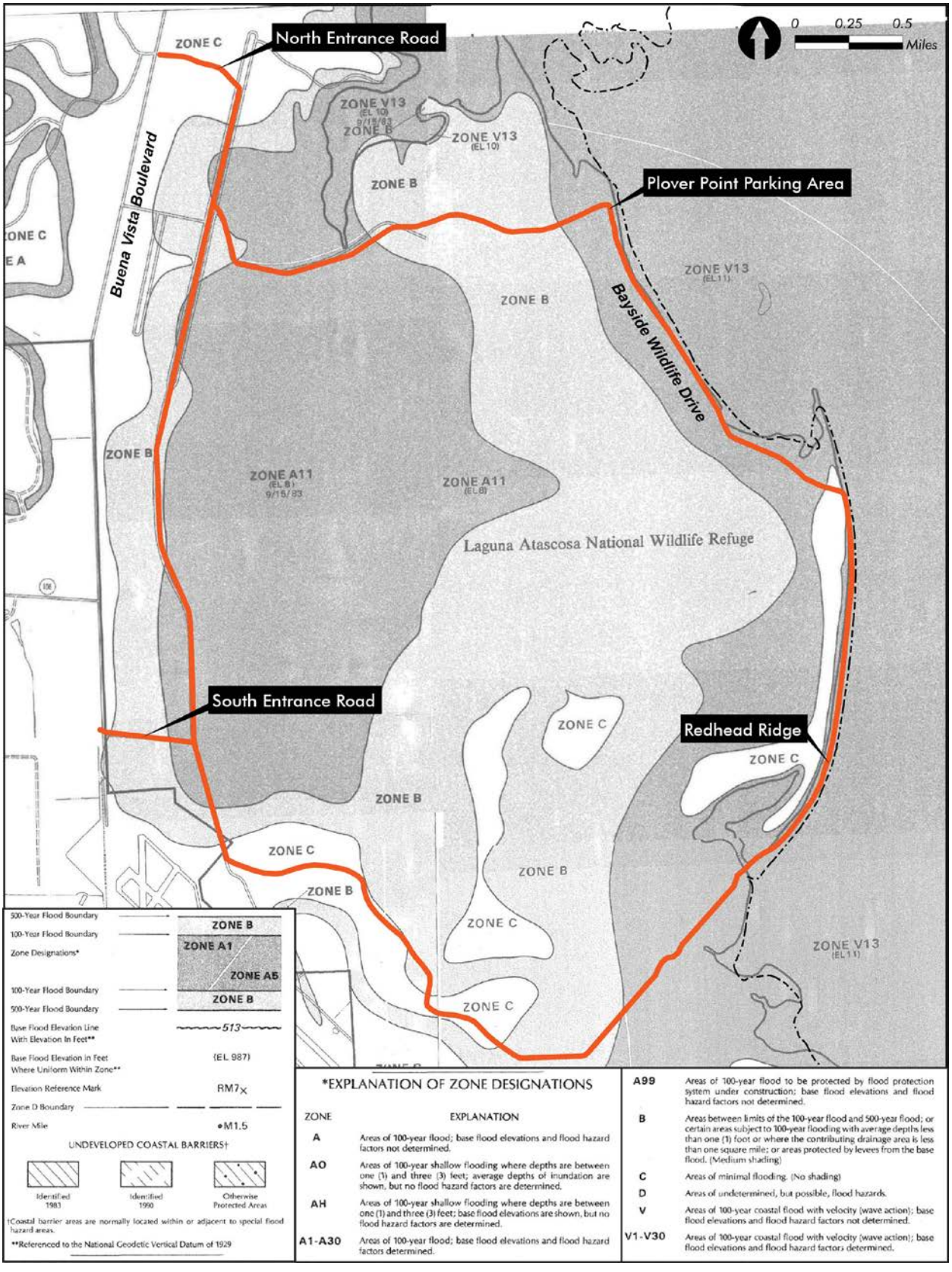
Alternative 1 – No Action Alternative

The No Action Alternative would have no effects on floodplains and, therefore, would have no cumulative impacts on floodplains.

Alternative 2 – Proposed Action

Other past, present, and future actions would not affect floodplains in the project area. Therefore, although the Proposed Action would result in long-term minor adverse effects on floodplains, the Proposed Action would not contribute to adverse cumulative effects on floodplains.

Figure 7. FEMA Floodplain Map of the Project Area



3.5 Vegetation and Wetlands

3.5.1 Affected Environment

The Refuge contains 450 documented plant species, in a variety of plant communities, including coastal prairie, sand and clay dunes, tidal flats, and wetlands. The lands surrounding Bayside Wildlife Drive are generally flat, sloping down to the Laguna Madre. Vegetation communities in and near the project area include disturbed uplands within the road shoulder, brushlands growing on silty clay dunes known as lomas, upland grasslands, coastal prairie, and salt flats or salt prairie.

Uplands within the road shoulder are typically dominated by the invasive species Kleberg bluestem (*Dichanthium annulatum*) and buffelgrass (*Cenchrus ciliaris*). The brushlands are dominated by a shrub and tree community with 30 or more species of woody plants. These areas have a different plant community than surrounding areas because of higher elevation and lower salinity. Common plant species in the brushlands include mesquite (*Prosopis glandulosa*), Texas ebony (*Ebenopsis ebano*), huisache (*Acacia farnesiana*), Spanish dagger (*Yucca treculeana*), cenizo (*Leucophyllum frutescens*), lime prickly ash (*Zanthoxylum fagara*), spiny hackberry (*Celtis pallida*), Berlandier fiddlewood (*Citharexylum berlandieri*), brasil (*Condalia hookeri*), tenaza (*Harvardia pallens*), and many others (Figure 8). The vegetation in these areas is often thorny and nearly impenetrable. The vegetation in other uplands often includes mesquite, buffelgrass, tornillo (*Prosopis reptans* var. *cinerascens*), Christmas cactus (*Cylindropuntia leptocaulis*), and Texas prickly pear (*Opuntia engelmannii* var. *lindheimer*).

Wetlands in the project area were delineated in November 2013 (ERO 2014). Two types of wetlands are found in the project area: high marsh or coastal prairie and salt flats or "salt prairie." The salt prairie community is typically a few feet above sea level and is dominated by saltwort (*Batis maritima*), glasswort (*Salicornia* sp.), annual seepweed (*Suaeda linearis*), and other species adapted to saline conditions (Figure 9). The coastal prairie community is found on slightly higher elevations and is dominated by Gulf cordgrass (*Spartina spartinae*) with other species such as sea oxeye (*Borrichia frutescens*), mesquite, and yucca along the edges (Figure 10). Bayside Wildlife Drive is often bordered on both sides by wetlands, and the boundary between the wetlands and the edge of the road is typically abrupt because of the slope next to the road.

Figure 8. Brushlands along Bayside Wildlife Drive

Figure 9. Salt Prairie Habitat along Bayside Wildlife Drive

Figure 10. Coastal Prairie Habitat along Bayside Wildlife Drive

3.5.2 Environmental Consequences

Alternative 1 – No Action Alternative

No new project-related ground disturbance with the potential to adversely impact vegetation and wetlands would occur. Current maintenance activities on roads, pullouts, and parking areas in the project area would continue. The impacts on vegetation and wetlands would be negligible under the No Action Alternative.

Alternative 2 – Proposed Action

Rehabilitating and widening 8.2 miles of Bayside Wildlife Drive, and constructing a turnaround and improvements to the parking area at Redhead Ridge would impact vegetation and wetlands. Construction activities would permanently remove upland vegetation in the project area. The majority of permanent impacts, approximately 5.48 acres, would occur within the previously disturbed road shoulder dominated by nonnative mowed grasses. Impacts also would include temporary disturbance to 1.08 acres of native brushlands. Permanent impacts on brushlands would be 1.68 acre, including 0.71 acre of brushlands along the northern portion of Bayside Wildlife Drive where the road grade would be raised to accommodate the two wildlife crossings and 0.97 acres at Redhead Ridge from constructing the turnaround and expanding the parking area. All temporarily disturbed areas would be revegetated with native species following construction.

In addition, construction would temporarily disturb approximately 5.82 acres of wetlands and would permanently fill approximately 0.46 acre of wetlands. Temporary impacts to wetlands are based on a 5-foot offset from the edge of permanent impacts. Construction activities would be

confined to the smallest area necessary to complete the work, and all areas of temporarily disturbed vegetation would be restored with native vegetation following construction. Temporary impacts would consist of disturbances to vegetation or equipment potentially driving across the ground surface. Equipment would mostly work from the existing road. No fill material would be placed in temporarily disturbed wetlands. Overall, the impacts on vegetation and wetlands would be local, long-term, minor, and adverse under the Proposed Action.

The project would require authorization from the Corps for compliance with Section 404 of the CWA. Permanent impacts on wetlands would be mitigated by creating or enhancing wetlands at the Refuge through the 404 permit process.

3.5.3 Cumulative Impacts

Alternative 1 – No Action Alternative

The No Action Alternative would have no impacts on vegetation and wetlands; therefore, the No Action Alternative would not result in cumulative impacts.

Alternative 2 – Proposed Action

Past, present, and reasonably foreseeable actions have the potential to impact vegetation and wetlands. Current and future Refuge operations, such as prescribed fires and maintenance, could result in impacts on vegetation or wetlands from vegetation clearing or placement of fill material. Impacts from past, present, and reasonably foreseeable future actions would be local, long-term, minor, and adverse. The overall cumulative impacts on vegetation and wetlands from the preferred alternative in combination with past, present, and reasonably foreseeable future actions would be local, long-term, minor, and adverse.

3.6 Wildlife

3.6.1 Affected Environment

The diverse coastal prairies and wetlands at the Refuge provide habitat to a variety of fish and wildlife species, as well as important wintering habitat for many migratory shorebirds. The Refuge provides habitat for approximately 415 species of migratory and residential birds, approximately 45 species of mammals, approximately 44 species of reptiles and amphibians, and approximately 40 fish species (Service 2010).

Common bird species within the Refuge include the northern bobwhite (*Colinus virginianus*), pied-billed grebe (*Podilymbus podiceps*), double-crested cormorant (*Phalacrocorax auritus*), great blue heron (*Ardea herodias*), great egret (*Ardea alba*), snowy egret (*Egretta thula*), white-eyed vireo (*Vireo griseus*), green jay (*Cyanocorax yncas*), horned lark (*Eremophila alpestris*), black-crested titmouse (*Baeolophus atricristatus*), eastern meadowlark (*Sturnella magna*), northern cardinal (*Cardinalis cardinalis*), great-tailed grackle (*Quiscalus mexicanus*), and many others (Service 2013). At least 95 nesting bird species have been recorded at the Refuge. Located on the southern end of the Central Flyway, the Refuge is a major stopover point on the lower Texas coast for migrating waterfowl going to and from Mexico. Peak use occurs in November when more than 250,000 ducks depend on the Refuge, with thousands more adjacent to the Refuge on the Laguna Madre. It is estimated that 80 percent of the North American

population of redhead ducks winter in this area. The Refuge is also a vital stopover for migrating neotropical songbirds. Painted buntings (*Passerina ciris*), Bullock's oriole (*Icterus bullockii*), and various warbler and hummingbird species all depend on the Refuge during their migration. Often, when many of the songbirds are migrating north, an occasional cold front moves in and causes the birds to "fallout." In need of shelter from strong winds and cold weather, the birds remain at the Refuge until they can regain their strength and continue their long journey.

Resident mammal species found at the Refuge include white-tailed deer (*Odocoileus virginianus*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), javelina (*Pecari tajacu*), feral hogs (*Sus scrofa*), gray fox (*Urocyon cinereoargenteus*), long-tailed weasel (*Mustela frenata*), and Mexican free-tailed bats (*Tadarida brasiliensis*). Nilgai (*Boselaphus tragocamelus*), an antelope species introduced from Asia, are commonly observed from Bayside Wildlife Drive.

Reptile species occurring at the Refuge include Texas tortoise (*Gopherus berlandieri*), six-lined racerunner lizard (*Cnemidophorus sexlineatus*), bullsnake (*Pituophis catenifer sayi*), and red-eared slider turtles (*Trachemys scripta elegans*). The Refuge is also home to many species of invertebrates, including the blue metalmark (*Lasaia sula*), a species that reaches its northern limits in South Texas.

3.6.2 Environmental Consequences

Alternative 1 – No Action Alternative

Under the No Action Alternative, the existing habitat conditions for wildlife would be maintained. No new short-term or long-term impacts on wildlife or wildlife habitat would occur.

Alternative 2 – Proposed Action

Widening and resurfacing Bayside Wildlife Drive and expanding the Redhead Ridge parking area would result in short-term adverse impacts on small mammals, birds, and other wildlife due to habitat loss and displacement during project implementation; however, similar habitat is abundant in the area and loss of species diversity or abundance is unlikely. Approximately 5.48 acres of disturbed grassland within the road shoulder would be permanently lost due to road widening. The road shoulder is dominated by nonnative mowed vegetation and is generally not high-quality wildlife habitat. Construction would permanently fill 0.46 acre of wetlands and would result in the permanent loss of 1.68 acre of brushland vegetation providing habitat for wildlife. Approximately 1.08 acres of brushland would be temporarily disturbed. The short-term decline in wildlife habitat is not expected to affect the project area's overall wildlife populations. Nesting bird species and other wildlife could be adversely affected by construction-related noise and vehicles accessing the site because construction is planned to occur during the summer months. These adverse impacts would be temporary and minor, lasting only as long as construction. Most work would occur within previously disturbed areas, or adjacent to the existing road shoulder. Reopening a portion of Bayside Wildlife Drive to private vehicles could result in increased risk of wildlife collision with vehicles; however, this risk would be mitigated by construction of two wildlife crossings on the northern section of the loop. Because of the limited disturbance to wildlife habitat and temporary nature of construction noise and activities, the potential impact on wildlife from road rehabilitation would be local, short-term, minor, and adverse.

3.6.3 Cumulative Impacts

Alternative 1 – No Action Alternative

There would be no effects on wildlife under the No Action Alternative and, therefore, there would be no cumulative impacts.

Alternative 2 – Proposed Action

Past, present, and reasonably foreseeable actions, such as prescribed fires and maintenance, could result in impacts on wildlife. Certain activities, such as prescribed fires at the Refuge, could have long-term beneficial effects on wildlife. Overall, impacts from past, present, and reasonably foreseeable future actions would be local, short-term, minor, and adverse. The overall cumulative impacts on wildlife from the Proposed Action in combination with past, present, and reasonably foreseeable future actions would be local, short-term, minor, and adverse. The Proposed Action would have a minor adverse contribution to cumulative impacts on wildlife.

3.7 Threatened and Endangered Species

3.7.1 Affected Environment

Under the ESA, the Refuge has responsibility to address impacts on federally listed, candidate, and proposed species. Other special status species are species listed as threated, endangered, or species of concern by the Texas Parks and Wildlife Department (TPWD).

Federally listed and candidate species that are present at the Refuge, along with their potential to occur in the project area are listed in Table 3. Potential for each species to occur in the project area is based on habitat requirements; Refuge staff knowledge of the area (Gustafson, pers. comm. 2014); and records maintained by the Refuge (Service 2010, 2013).

Table 3. Federally Listed and Candidate Species at the Refuge.*

Common Name	Scientific Name	Federal Status	Found in Project Area?
Birds			
Northern aplomado falcon	*Falco femoralis septentrionalis*	E	Yes
Piping plover	*Charadrius melodus*	T	Yes
Mammals			
Gulf Coast jaguarundi	*Herpailurus yagouaroundi cacomitli*	E	Yes
Ocelot	*Leopardus pardalis*	E	Yes
Reptiles			
Atlantic hawksbill sea turtle	*Eretmochelys imbricata*	E	No
Green sea turtle	*Chelonia mydas*	T	No
Kemp's ridley sea turtle	*Lepidochelys kempii*	E	No
Loggerhead sea turtle	*Caretta caretta*	T	No

T = Federally Threatened, E = Federally Endangered.
*Federally listed species that regularly occur at the Refuge. Species that occur accidentally or could occur are not included for the purposes of this EA.
Source: Service 2010, 2014b.

Northern aplomado falcons are year-round residents of the Lower Rio Grande Valley and are known to nest at the Refuge (Service 2013). A northern aplomado falcon reintroduction program began with large-scale releases at the Refuge in 1993. The Refuge's coastal prairie, savannah, and marshes provide some of the best aplomado falcon habitat. This species occurs in coastal prairie and savannah habitat in flat, open areas containing yuccas and mesquite trees. Aplomado falcons are occasionally seen along Bayside Wildlife Drive. Two nest structures which have historically been used by aplomado falcons are present near the project area.

Piping plovers are uncommon at the Refuge in spring, winter and fall and are rare during the summer (Service 2013). No nesting by piping plovers has been recorded at the Refuge to date and there is no critical habitat designated for this species in the Refuge. On wintering grounds, piping plovers forage and roost along barrier and mainland beaches, sand, mud, and algal flats, wash over passes, salt marshes, and coastal lagoons (Service 2003). Piping plovers are unlikely to nest within the project area.

Little is known about the habitat of the **Gulf Coast jaguarundi** in Texas. It is thought that habitat requirements for jaguarundis are similar to those for ocelots (described below). Typical habitat consists of dense brushland, similar to that described for ocelot. Although jaguarundi habitat is similar to that for ocelot, they are thought to be tolerant of a wider range of habitats. Sightings and information from Mexico indicate that jaguarundis may frequent open areas such as grasslands and pastures more commonly than ocelots (TPWD no date (a)). Riparian habitat along creeks and rivers may also be used by jaguarundis. Jaguarundis also are more active during the day than ocelots. Habitat loss is the major threat to jaguarundis in Texas, as most dense mixed shrub habitat in the Lower Rio Grande Valley has been cleared and converted to agriculture use. The dense, thorny shrub habitats along sections of Bayside Wildlife Drive provide suitable habitat for jaguarundi.

The **ocelot** is a small striped cat that formerly ranged from southern Texas to Arkansas and Louisiana in the United States, but is now restricted to a few populations in southern Texas and Arizona. The Refuge is home to one of the two remaining breeding populations of ocelots in the United States. In Texas, typical ocelot habitat consists of dense brushlands composed of mixed brush species such as spiny hackberry, brasil, desert yaupon (*Schaefferia cuneifolia*), wolfberry (*Lycium bernlandieri*), lotebush (*Zizyphus obtusifolia*), amargosa (*Castela erecta*), whitebrush (*Aloysia gratissima*), catclaw (*Acacia greggii*), blackbrush (*Acacia rigidula*), lantana (*Lantana* sp.), guayacan (*Guaiacum angustifolium*), and cenizo (TPWD no date (b)). Interspersed trees such as mesquite, live oak (*Quercus virginiana*), Texas ebony, and hackberry (*Celtis* sp.) may also occur in ocelot habitat. Optimal ocelot habitat has at least 95 percent canopy cover of shrubs, whereas marginal habitat has 75 to 95 percent canopy cover. Ocelots are typically most active at night and rarely leave the cover of dense brush. Tewes (1986) found that core areas of ocelot home ranges contained more thorn scrub habitat than peripheral areas of their home ranges on the Refuge. Ocelots use narrow strips of shrubs or forests for travel and dispersal, (Ludlow and Sunquist 1987, Caso 1994, Tewes et al. 1995). Such corridors provide critical landscape connectivity, thus they are important aspects of ocelot conservation (Tewes et al. 1995, Tewes and Blanton 1998). Bayside Wildlife Drive and nearby areas contain optimal to prime brushland habitat that is regularly used by ocelots (Service 2005).

Habitat loss is one of the main threats to ocelots. Much of the brushland habitat in the Lower Rio Grande Valley has been cleared for agricultural use. Currently, only about 1 percent of the South Texas area supports optimal habitat (TPWD no date (b)). Most of this habitat occurs in scattered patches probably too small to support viable populations of ocelots.

Only about 50 ocelots are estimated to remain in the United States, which includes a population of 12 at the Refuge. The ocelot population at the Refuge is one of two breeding populations in Texas. Although habitat loss is the single greatest threat to ocelots, an estimated 40 percent of Refuge ocelots studied over the course of 30 years have died as a result of being hit by vehicles. Ocelots often must travel significant distances and cross dangerous roads in search of food, shelter, and mates. The Service and the Texas Department of Transportation are working together to reduce ocelot road mortality by installing wildlife underpasses under roads where ocelots are known to frequently cross (Service 2014a). The Bayside Wildlife Drive area is heavily used by ocelots. Two ocelots are known to have been killed by vehicles on Bayside Wildlife Drive, and a third was killed on Buena Vista Drive about 0.25 mile away (Service 2014a).

The **Atlantic hawksbill**, **green**, **Kemp's ridley**, and **loggerhead** sea turtles occur in Gulf coastal waters. Habitat for these species occurs along the Gulf Coast, but is not present in the project area.

A total of 23 species listed as endangered or threatened by the TPWD are known to occur at the Refuge. In addition to species that are also federally listed (Table 3), eight species listed by the TPWD have the potential to occur in or near the project area (Table 4). The remaining species have either not been documented, are accidental visitors, or lack suitable habitat within the project area.

Table 4. TPWD Endangered and Threatened Species at the Refuge.*

Common Name	Scientific Name	TPWD Status	Found in Project Area?
Birds			
American peregrine falcon	*Falco peregrinus anatum*	ST	Yes
Brown pelican	*Pelecanus occidentalis*	SE	No
Northern beardless tyrannulet	*Camptostoma imberbe*	ST	No
Reddish egret	*Egretta rufescens*	ST	Yes
Texas Botteri's sparrow	*Aimophila botterii texana*	ST	Yes
White-faced ibis	*Plegadis chihi*	ST	Yes
White-tailed hawk	*Buteo albicaudatus*	ST	Yes
Wood stork	*Mycteria americana*	ST	Yes
Mammals			
Coues' rice rat	*Oryzomys couesi*	ST	No
Reptiles			
Black-spotted newt	*Notophthalmus meridionalis*	ST	No
Black-striped snake	*Coniophanes imperialis*	ST	No
Sheep frog	*Hypopachus variolosus*	ST	No
South Texas siren	*Siren intermedia* ssp.	ST	No
Texas horned lizard	*Phrynosoma cornutum*	ST	Yes
Texas indigo snake	*Drymarchon melanurus erebennus*	ST	Yes
Texas tortoise	*Gopherus berlandieri*	ST	Yes

ST = State Threatened, SE = State Endangered.
*State-listed species that regularly occur at the Refuge. Species that occur accidentally or could occur are not included for the purposes of this EA.
Source: Service 2010, 2014b.

Peregrine falcons are uncommon at the Refuge. This species occurs near the coast in the winter, occupies a wide range of habitats during migration, and could occasionally forage in the project area. **Reddish egrets** and **white-faced ibises** are common in wetlands at the Refuge, and are likely to occur in or near the project area. The **Texas Botteri's sparrow** and **white-tailed hawk** occur in grasslands, coastal prairies, and savannahs at the Refuge, and could occur in the project area. **Wood storks** are uncommon at the Refuge in summer, fall, and winter (Service 2013). Wood storks forage in ponds, flooded fields, ditches, and other shallow standing water, including salt water. Wood storks formerly nested, but do not currently breed, in Texas. This species could occur in the project area (Gustafson, pers. comm. 2014).

Texas horned lizards occur in open, arid, and semiarid areas with sparse vegetation such as grass, cactus, brush, or scrubby trees. **Texas indigo snakes** occur in brushlands and other densely vegetated areas. **Texas tortoises** occur in open brush habitats with a grass understory, and tend to avoid open areas. All three of these reptiles are known to occur at the Refuge and could occur in the project area.

3.7.2 Environmental Consequences

Alternative 1 – No Action Alternative

Under the No Action Alternative, the existing habitat conditions would be maintained. No effects on federal or state threatened and endangered species would occur.

Alternative 2 – Proposed Action

Northern aplomado falcons, piping plovers, Gulf Coast jaguarundis, ocelots, peregrine falcons, reddish egrets, Texas Bottieri's sparrows, white-faced ibises, white-tailed hawks, wood storks, Texas horned lizards, Texas indigo snakes, and Texas tortoises could be temporarily disturbed or displaced by increased human activity and noise during construction. Impacts on habitat for these species would be minimal because the majority of work would occur within existing areas of disturbance. Impacts from increased noise and human activity would be short-term, occurring only during construction. Conservation measures, outlined above in Section 2.2.9, would reduce or eliminate impacts to these species. The Refuge would monitor ocelot movements using radio telemetry and GPS before and during construction. The construction contractor would be required to walk through the habitat being impacted at the wildlife crossings and ensure that no den site or injured ocelot is located in the area. Closing road sections in prime ocelot habitat would provide a long-term benefit to ocelots. Construction will be avoided during the nesting season for aplomado falcons (March- August). The Refuge will ensure that any construction work taking place near a potential aplomado nest site primarily takes place in the winter months. Temporary impacts on coastal prairie habitat would be restored following construction. The Refuge will ensure that aplomado falcon nest structures will be moved further from the road to prevent disturbance. The overall impact on threatened and endangered species would be local, short-term, minor, and adverse under the Proposed Action.

The Refuge prepared an intra-service biological evaluation (BE) to document potential impacts and proposed mitigation measures to protect federally listed threatened and endangered species (Appendix B). The BE found that the Proposed Action would have no effect on the piping plover and may affect, but is not likely to adversely affect the aplomado falcon, Gulf Coast jaguarundi, and ocelot.

3.7.3 Cumulative Impacts

Alternative 1 – No Action Alternative

There would be no effects on threatened and endangered species under the No Action Alternative and, therefore, there would be no cumulative impacts.

Alternative 2 – Proposed Action

Past, present, and reasonably foreseeable future actions have the potential to affect threatened and endangered species. Actions such as vehicle use of Bayside Wildlife Drive, routine road maintenance, and prescribed fires could result in occasional displacement or disturbance to threatened and endangered species. Prescribed fire could also result in a benefit to species that depend on the coastal prairie community, such as aplomado falcons.

Impacts from past, present, and reasonably foreseeable future actions would be local, long-term, minor, and adverse. The overall cumulative impacts on threatened and endangered species from the Proposed Action in combination with past, present, and reasonably foreseeable future actions would be local, long-term, minor, and adverse. The Proposed Action would have a negligible adverse contribution to cumulative impacts on special status species over the short and long term.

3.8 Visitor Services/Activities

3.8.1 Affected Environment

The Refuge hosts approximately 350,000 visitors annually (Service 2010), with peak visitation occurring from November through March. The Refuge offers a variety of experiences including a visitor center that is open year-round; wildlife viewing; hiking; biking; guided kayak tours; hunting for white-tailed deer, feral hogs, and nilgai antelope; and fishing. As one of the top birding areas in the nation, with 415 documented bird species (the most species of any national wildlife refuge), the Refuge is a major destination for wildlife observation and photography.

The Refuge hosts programs and events such as birding and nature festivals, school and youth group tours, the annual Ocelot Conservation Festival, and youth scouting programs. Other interpretation and education features include interpretive signs, exhibits, and two auto tour routes with associated interpretive signs. Interpretive programs offered include birding tours, nature walks, guided van tours, sunset wildlife tours, and butterfly identification walks.

Bayside Wildlife Drive is a popular destination at the Refuge, offering excellent wildlife viewing opportunities and views of the Laguna Madre. Attractions along Bayside Wildlife Drive include the Plover Point boardwalk; an elevated overlook at Redhead Ridge; and the Moranco Blanco Trail, a 3-mile loop trail just south of Redhead Ridge. In October 2013, Bayside Wildlife Drive closed to private vehicles to protect the endangered ocelot. However, the 15-mile loop remains open to hiking, biking, and guided tours by tram.

3.8.2 Environmental Consequences

Alternative 1 – No Action Alternative

No change would occur to visitor services and activities under the No Action Alternative. Bayside Wildlife Drive would not be widened or resurfaced, and no modifications would be made to the Redhead Ridge parking area. Bayside Wildlife Drive would continue to be closed to private vehicles, which adversely affects the visitor experience for those visitors who wish to drive the loop in their own vehicles. Bayside Wildlife Drive would continue to be open to hiking, biking, and guided tours. The road surface of the Visitor Center Road would continue to deteriorate, potentially resulting in adverse effects on the visitor experience. Under the No Action Alternative, effects on visitor services and activities would be long-term, moderate, and adverse.

Alternative 2 – Proposed Action

Access to Bayside Wildlife Drive and the Refuge visitor center would be temporarily affected during construction. Traffic delays during resurfacing of the Visitor Center Road and parking

areas at the visitor center would inconvenience visitors. Public access to Bayside Wildlife Drive would be affected by construction, with temporary closures to bicycles and hikers. Tram tours could also be reduced or suspended during construction. These short-term impacts would end after construction is completed. Impacts on visitors would be minimized by constructing road improvements during the summer months, when visitor use of the Refuge and Bayside Wildlife Drive is lower compared with other times of the year. Over the long term, the Proposed Action would improve visitor access and the visitor experience. Reopening a portion of Bayside Wildlife Drive to private vehicles would allow more visitors to experience an area within the Refuge, which is currently only accessible by guided tram tours, by bicycle, or on foot. Expanding the parking area at Redhead Ridge would also improve the visitor experience.

The Refuge would implement a number of steps to provide timely and accurate information to Refuge visitors during construction to maintain a quality visitor experience. To facilitate visitor planning, the status of roadwork and traffic delays would be advertised two weeks in advance and would be updated daily. Information on road construction and closures would be communicated via the Refuge website, visitor center, news releases, and social media such as Facebook.

Short-term moderate adverse effects on visitor service and activities would occur during construction. While construction delays would temporarily inconvenience visitors, substantial changes in the number of visitors to the Refuge are not expected. Over the long term, the proposed improvements to the condition of the road and parking areas and reopening of a portion of Bayside Wildlife Drive to private vehicles would provide a long-term beneficial effect on visitor services and activities.

3.8.3 Cumulative Impacts

Alternative 1 – No Action Alternative

Past, present, and reasonably foreseeable actions such as routine road maintenance, vehicle traffic on Bayside Wildlife Drive, and prescribed fires could have short-term and long-term minor adverse effects on visitor services and activities. Impacts from past, present, and reasonably foreseeable actions also include beneficial effects, such as operation of guided tram tours along Bayside Wildlife Drive. The overall cumulative impact of the No Action Alternative in combination with past, present, and reasonably foreseeable actions would be long-term, minor, and adverse. The No Action Alternative would have a minor adverse contribution to the cumulative effect on visitor services and activities.

Alternative 2 – Proposed Action

As described above, past, present, and reasonably foreseeable actions have had short-term and long-term minor adverse effects, as well as beneficial effects, on visitor services and activities. The Proposed Action would result in short-term moderate adverse effects on visitor services and activities during construction and moderate beneficial effects following construction. The overall cumulative impacts on visitor services and activities from the Proposed Action in combination with past, present, and reasonably foreseeable future actions would be long-term, minor, and beneficial, with a moderate beneficial contribution from the Proposed Acton.

3.9 Unavoidable Adverse Effects

Implementing the Proposed Action may result in some unavoidable adverse effects. Impervious surface area would be increased by approximately 5.48 acres, potentially affecting floodplains. Approximately 1.08 acres of vegetation would be temporarily removed during construction. Vegetation would be permanently removed, including 5.48 aces of mowed road shoulder, 0.46 acre of coastal prairie and salt prairie wetlands and 1.68 acres of native brushlands. Temporarily disturbed areas would be restored with native plant species following construction. Wetland impacts would be mitigated by wetland construction or enhancement during the Section 404 permitting process. Some resident wildlife, potentially including threatened and endangered species, would be temporarily disturbed during construction but these impacts are expected to be minor. Visitor services and activities would be temporarily adversely affected during construction. Opportunities for public viewing and photographing wildlife along Bayside Wildlife Drive would be improved by the Proposed Action.

3.10 Irreversible and Irretrievable Commitment of Resources

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that this use could have on future generations. Irreversible effects primarily result from the use or destruction of specific resources that cannot be replaced within a reasonable period, such as energy or minerals. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action, such as extinction of a threatened or endangered species or the disturbance of a cultural resource.

The Proposed Action would result in the irretrievable commitment of resources. Construction would require irretrievable commitment of fossil fuels (diesel and gasoline), oils, and lubricants used by heavy equipment and vehicles. The Proposed Action would result in unavoidable harm or harassment to some wildlife. The Service would implement BMPs to minimize potential impacts.

3.11 Summary of Environmental Effects by Alternative

Environmental effects of the No Action Alternative and the Proposed Action are summarized in Table 5.

Table 5. Summary of Environmental Effects by Alternative.

Environmental Resource	Alternative 1 – No Action Alternative	Alternative 2 – Proposed Action
Floodplains	No effect	Long-term minor adverse (increase in impervious area)
Vegetation and Wetlands	Long-term negligible adverse	Long-term minor adverse (vegetation impacts: 1.08 acres temporary, 5.48 acres permanent impacts to mowed grassland, and 1.68 acres permanent impacts to brushlands; wetland impacts: 5.82 acres temporary, 0.46 acre permanent)
Wildlife	No effect	Short-term minor adverse (disturbance of wildlife during construction) and long-term loss of habitat
Threatened and Endangered Species	No effect	Short-term minor adverse (disturbance during construction); long-term beneficial effect on ocelots by closing road segments in prime habitat and building crossing structures

Environmental Resource	Alternative 1 – No Action Alternative	Alternative 2 – Proposed Action
Visitor Services/Activities	Long-term moderate adverse (continued closure of Bayside Wildlife Drive)	Short-term moderate adverse (temporary inconvenience to visitors during construction); long-term moderate benefit (improved visitor experience from reopening Bayside Wildlife Drive)

4 CONSULTATION AND COORDINATION

A scoping notice and press release describing the Proposed Action initiated public scoping on April 2, 2014 (Appendix A). The Refuge sent approximately 260 letters to interested individuals; organizations; state, county, and local governments; federal agencies; local businesses; and media outlets describing the Proposed Action and asking for comments. A partial list of agencies and organizations contacted to assist in identifying issues and providing an opportunity to review or comment on this EA are presented in Appendix C. The Refuge hosted an open house meeting on April 16, 2014 at the Harlingen Cultural Arts Center to inform the public about the proposed project and receive written suggestions, comments, and concerns regarding the project. The Refuge received 37 written comments from the public during the April 2 to May 3, 2014 comment period. A total of 11 comments expressed support for keeping the road closed to private vehicles (No Action Alternative), while 26 comments expressed support for the proposed project (Proposed Action). Comments were received by email, through Facebook, by fax, and on paper comment forms. Most commenters supporting the No Action Alternative expressed concern for wildlife being struck by vehicles. Additional concerns of those supporting the No Action Alternative included damage to habitat, safety concerns to visitors from two-way traffic and speeding, and increased trash. One commenter suggested the tram should make more frequent stops, while another suggested the Refuge could offer golf carts for rent to allow the public to drive the road. Commenters supporting the Proposed Action generally expressed a desire to see the road open to private vehicles, especially for viewing birds and other wildlife. Several commenters indicated dissatisfaction with the tram, including that the tram ride takes too long and is not comfortable. Several commenters indicated that Proposed Action would protect wildlife.

The office of the Texas SHPO was notified by letter of the proposed project on April 18, 2014. During a telephone call with the Refuge Deputy Manager on June 5, 2014, the SHPO indicated that his office had received the letter, had reviewed it, and had decided not to respond. If the SHPO does not respond within 30 days after receiving a request for clearance, the SHPO declares that no clearance is needed for the proposed action, and construction may proceed.

The public, agencies, and American Indian groups traditionally associated with the lands of the Refuge will also have an opportunity to review and comment on this EA. This EA will be made available to agencies and other interested public through October 15, 2014.

5 LIST OF PREPARERS AND CONTRIBUTORS

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Kay Wall, Technical Editor

Holdeman Landscape Architecture
Mark Holdeman, Landscape Architect

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Appendix A
Scoping Notice

April 02, 2014

Subject: Bayside Tour Loop Project
Reference: Request for Comments on Proposal (Scoping Comments) and Public Open House

Dear Interested Party:

Laguna Atascosa National Wildlife Refuge (Refuge), in cooperation with the Federal Highway Administration – Central Federal Lands Highway Division (FHWA), is beginning an environmental assessment process to evaluate the potential impacts from the proposed Bayside Tour Loop Project at the Refuge.

The proposed project is being considered to allow vehicular access to the Refuge's popular Bayside Tour Loop (Tour Loop) while protecting the endangered ocelot. Ocelots are small wild cats with a range in the United States that once extended from South Texas into Arkansas and Louisiana, but is now reduced to two known populations in South Texas, one of which is found on the Refuge. There are estimated to be less than 50 ocelots in the United States and the primary threat they face is habitat loss and fragmentation. Habitat loss has left the cats stranded in small isolated pockets of native vegetation surrounded by roads, agriculture, and development.

Though loss of habitat is the single greatest threat to ocelots, an estimated 40 percent of ocelots studied in the Rio Grande Valley over the course of 30 years have died as a result of being hit by vehicles. The cats, males in particular, often must travel significant distances and cross dangerous roads in search of food, shelter, and mates. Concern about impacts on ocelots prompted the U.S. Fish and Wildlife Service to close the Tour Loop to private vehicles in 2013.

The proposed project will protect ocelots on the Tour Loop while providing public vehicles access to a portion of the former auto tour route. This project will modify the current south entrance road into a two-way road and will connect to the Tour Loop that is a one-way road. Culverts will be constructed at the north end of the Drive to allow wildlife crossing, and a series of wildlife crossings with rumble strips will be constructed in the southern portion of the Drive. Fencing will be used to direct wildlife to the crossings. The Tour Loop will be opened to public vehicles following completion of the project. This modified route will eliminate traffic in prime ocelot habitat while allowing access to the scenic bayside.

An environmental assessment will be prepared in compliance with the National Environmental Policy Act to provide the decision-making framework that 1) analyzes a reasonable range of alternatives to meet project objectives, 2) evaluates issues and impacts on Refuge resources and values, and 3) identifies mitigation measures to lessen the extent of impacts.

The Refuge and FHWA encourage public participation throughout the NEPA process. There will be two opportunities to comment formally on the project—once during initial project scoping and again following release of the environmental assessment. The Refuge is currently in the scoping phase of the proposed project and invites the public to submit written suggestions, comments, and concerns regarding the project.

The Refuge will be hosting a public open house on **April 16, 2014 from 5 p.m. to 7 p.m. at the Harlingen Cultural Arts Center on 576 76 Drive** to inform the public about the proposed project plans. This will also be a time for the public to express their ideas and recommendations. If you wish to submit comments during scooping, we encourage you to do so by email at leo_gustafson@fws.gov. Comments may also be mailed to:

Laguna Atascosa National Wildlife Refuge
ATTN: Leo Gustafson
22817 Ocelot Road
Los Fresnos, TX 78566

Please submit all comments before May 3, 2014, by contacting Leo Gustafson at leo_gustafson@fws.gov or (956) 748-3607 x 107.

Sincerely,
Leo Gustafson, Assistant Refuge Manager

Appendix B
Intra-Service Section 7 Consultation

INTRA-SERVICE SECTION 7 BIOLOGICAL EVALUATION FORM

I. Region: Two

II. Service Activity: Bayside Drive Improvements and Wildlife Crossing Construction

III. Pertinent Species and Habitat:

A. Listed species and/or their critical habitat within the action area:
Ocelot (*Leopardus pardalis*)- Endangered
Jaguarundi (*Puma yagouaroundi cacomitli*)- Endangered
Northern aplomado falcon (*Falco femoralis septentrionalis*)- Endangered
Piping plover (*Charadrius melodus*)- Endangered

B. Proposed species and/or proposed critical habitat within the action area: None

C. Candidate species within the action area: None

D. Include species/habitat occurrence on a map: See attached map

IV. Geographic area or station name and action:

Laguna Atascosa NWR, Bayside Drive improvements

V. Location (maps attached):

A. Ecoregion Number and Name: 34. Western Gulf Coastal Plain

B. County and state: Cameron County, Texas

C. Latitude and longitude: 26°07'46.91" N 97°27'23.52" W

D. Distance (miles) and directions to nearest town:
The town of Rio Hondo is 18 miles to the east. The town of Harlingen is 25 miles to the northwest. The town of Brownsville is 30 miles to the southeast.

E. Species/habitat occurrence: Species occurrence on map.

VI. Description of proposed action:

The Laguna Atascosa NWR (Refuge) is partnering with the Federal Highway Administration (FHA) to make improvements to Bayside Wildlife Drive (Bayside Drive) in the interest of reducing the risk of vehicular mortality to ocelots. Bayside Drive is a 15 mile tour loop that had been open to private vehicles until September 2013, when it was closed because of concerns over ocelot mortality events that occurred in the late 1990's and early 2000's. The Refuge is working with the FHA to:

1. Shorten the length of Bayside Drive from 15 miles to approximately 10.5 miles.
2. Increase the width of the Drive to accommodate two-way traffic flow. This work will be done on all 8.2 miles of the road. However, the footprint of the road will not change.
3. Construct/install 2 wildlife crossings in ocelot habitat at the northern end of Bayside Drive to allow ocelots and other wildlife species a safe place to move under the road and avoid traffic.
4. Remove the current Bayside Drive entrance and relocate it to the southwest side of Bayside Drive at a location that is already constructed, but in need of improvement. This improvement increases the footprint of this location by7.62 acres. If the purchase of land for the alternate entrance is not approved, then the current Bayside Drive entrance will be used.

5. A turnaround will be installed south of the Redhead Ridge Overlook. This turnaround will be large enough to accommodate shuttle buses. The width of the turnaround will be constructed to the west of the road.

VII. Determination of Effects

A. Explanation of effects of the action on species and critical habitats.

Endangered Status

The ocelot was listed as endangered in 1972 (37 FR 6476) under the authority of the Endangered Species Conservation Act of 1969 (USFWS 1972). The 1969 Endangered Species Conservation Act maintained separate lists for foreign and native wildlife. The ocelot appeared on the foreign list, but due to an oversight, not on the native list. Following passage of the Endangered Species Act in 1973 (ESA), the ocelot was included on the January 4, 1974, list of "Endangered Foreign Wildlife" that "grandfathered" species from the lists under the 1969 Endangered Species Conservation Act into a new list under the ESA (USFWS 1974). The entry for the ocelot included "Central and South America" under the "Where found" column in the new ESA list. Endangered status was extended to the U.S. portion of the ocelot's range for the first time with a final rule published July 21, 1982 (47 FR 31670) (USFWS 1982). The "Historic range" column for the ocelot's entry in the rule reads, "U.S.A. (TX, AZ) south through Central America to South America." The entry on the current list (USFWS 2013) is essentially the same, and reads, "U.S.A. (TX, AZ) to Central and South America." In the 1982 final rule (47 FR 31670), the Service made a determination that the designation of critical habitat was not prudent because such a designation would not be in the best interests of conservation of the species.

The Piping Plover was listed as Threatened "Entire, except those areas where listed as endangered" in 1985 (50 FR 50726 50734) (Great Lake watershed, USFWS 2003). The U.S. Fish and Wildlife Service, designated revised critical habitat for the wintering population of the piping plover (*Charadrius melodus*) in 18 specific units in Texas under the Endangered Species Act of 1973, as amended. The revised critical habitat is located in Cameron, Willacy, Kenedy, Kleberg, Nueces, Aransas, Calhoun, Matagorda, and Brazoria Counties, Texas. Other previously designated critical habitat for the wintering piping plover in Texas or elsewhere in the United States remains unaffected.

The U.S. Fish and Wildlife Service determined the northern aplomado falcon, (*Falco femoralis septentrionuh)*, to be an endangered species under provisions of the Endangered Species Act of 1973, as amended. This falcon is threatened by continued habitat loss and by contamination with organochlorine pesticides. No critical habitat has been proposed. This rule will implement the protection provided by the Endangered Species Act of I9739 as amended.

Habitat

Tewes (1986) found that core areas of ocelot home ranges contained more thorn scrub than peripheral areas of their home ranges on Laguna Atascosa NWR. Ocelots will use narrow strips of shrubs or forests for travel and dispersal, (Ludlow and Sunquist 1987, Caso 1994, Tewes et al. 1995). Such corridors can provide critical landscape connectivity, thus they are important aspects of ocelot conservation (Tewes *et al.*1995, Tewes and Blanton 1998). Ocelots have been documented near and inside the Bayside Drive loop, which contains prime brushland habitat and has regular ocelot presence, (Refuge WHMR 2005).

Northern aplomado falcon habitats are characterized by open terrain with scattered trees and/or shrubs, relatively low ground cover, and an abundance of small to medium sized birds (Hector 1983). In Texas, Aplomado falcons are found exclusively in the deep south area. Coastal prairie and savannah provides essential foraging and nesting habitats for the aplomado falcon. There are 2 historical nesting sites and foraging habitats in the construction area.

Piping plover wintering habitats are used from the Gulf Coast to Texas and Mexico. On the wintering grounds, piping plovers forage and roost along barrier and mainland beaches, sand, mud, and algal flats, wash overpasses, salt marshes, and coastal lagoons (USFWS 2003). It is unlikely that construction crews will come across a nesting piping plovers along the footprint of Bayside Drive, because the construction will not take place in piping plover nesting habitat.

Disturbance

Bayside Drive and the areas within and around it are home to several documented ocelots. They have established home ranges as well as paths of travel that will fall within the footprint of the project.

There are no nesting Aplomado falcons in the path of the Drive; however, historically 2 nests are within 30 yards of the road that would be under construction. Potential Aplomado nesting sites (abandoned nests from previous years), hack towers, and observation posts are near the construction site.

The construction disturbance should have no impact to piping plovers because construction does not take place in piping plover nesting habitat.

It is anticipated that all pavement and structural work would be constructed within the existing road prism, which varies from 12 to 22 feet in width at the top and is at least 26 feet wide at the bottom. Vegetation clearing would occur on the existing foreslopes to accommodate the wider road. Vegetation clearing also would occur to accommodate the new larger parking area and turnaround at the Redhead Ridge parking area. Construction would result in permanent impacts to vegetation due to widening the road surface from one lane to two, including 0.46 acre of wetlands, 5.48 acres of mowed grasslands within the road shoulder, and 1.68 acres of brushlands.

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B. Explanation of Actions to Reduce Adverse Effects

- Construction will be conducted relatively quickly to have shorter duration of disturbance.
- Construction will only be conducted during daylight hours to reduce chances of affecting ocelots traveling nocturnally.
- The construction phase will be conducted in a way that avoids the nesting season for aplomado falcons (March- August).

- If construction will take place during any part of nesting season, the Refuge will ensure that the aplomado nest structures will be moved further from the road to prevent disturbance.
- Contractors will be educated on safe speeds for vehicle and ocelot (vs. bobcat) identification so they can better be aware of possible ocelot presence and keep mortality and disturbance risks low.
- The USFWS will monitor ocelot movements using radio telemetry and/or GPS collars prior to, and during the construction phase of this project.
- The construction contractor will be required to walk through the habitat being impacted at the wildlife crossing and ensure that no den site or injured cat is located in that area.
- Construction will remove the minimum amount of brush possible during construction.
- Temporary impacts would be limited to areas less than 5 feet from the edge of permanent disturbance.
- Temporarily disturbed areas would be revegetated with native species. Native trees and shrubs would be planted to restore brushland habitat.

VIII. Determination of effects: Effect determination and response requested: [*=optional]

A. Listed species/designated critical habitat:

Determination		Response requested
No effect/no adverse modification		
Species and Habitat:	**piping plover**	✓ * Concurrence
May affect, but is not likely to adversely affect:		
Species and Habitat:	**ocelot, jaguarondi, aplomado falcon**	✓ Concurrence
Is likely to adversely affect species		
Species and Habitat:	**None**	____ Formal consultation

B. Proposed species/proposed critical habitat: None

C. Candidate Species: None

Boyd Blihovde — 8/28/2014

Signature — Date

Refuge Manager, Laguna Atascosa NWR

IX. Reviewing ESO Evaluation:

A. Concurrence ✓ Nonconcurrence _____
B. Formal consultation required _____
C. Conference required _____
D. Informal conference required _____
E. Remarks:

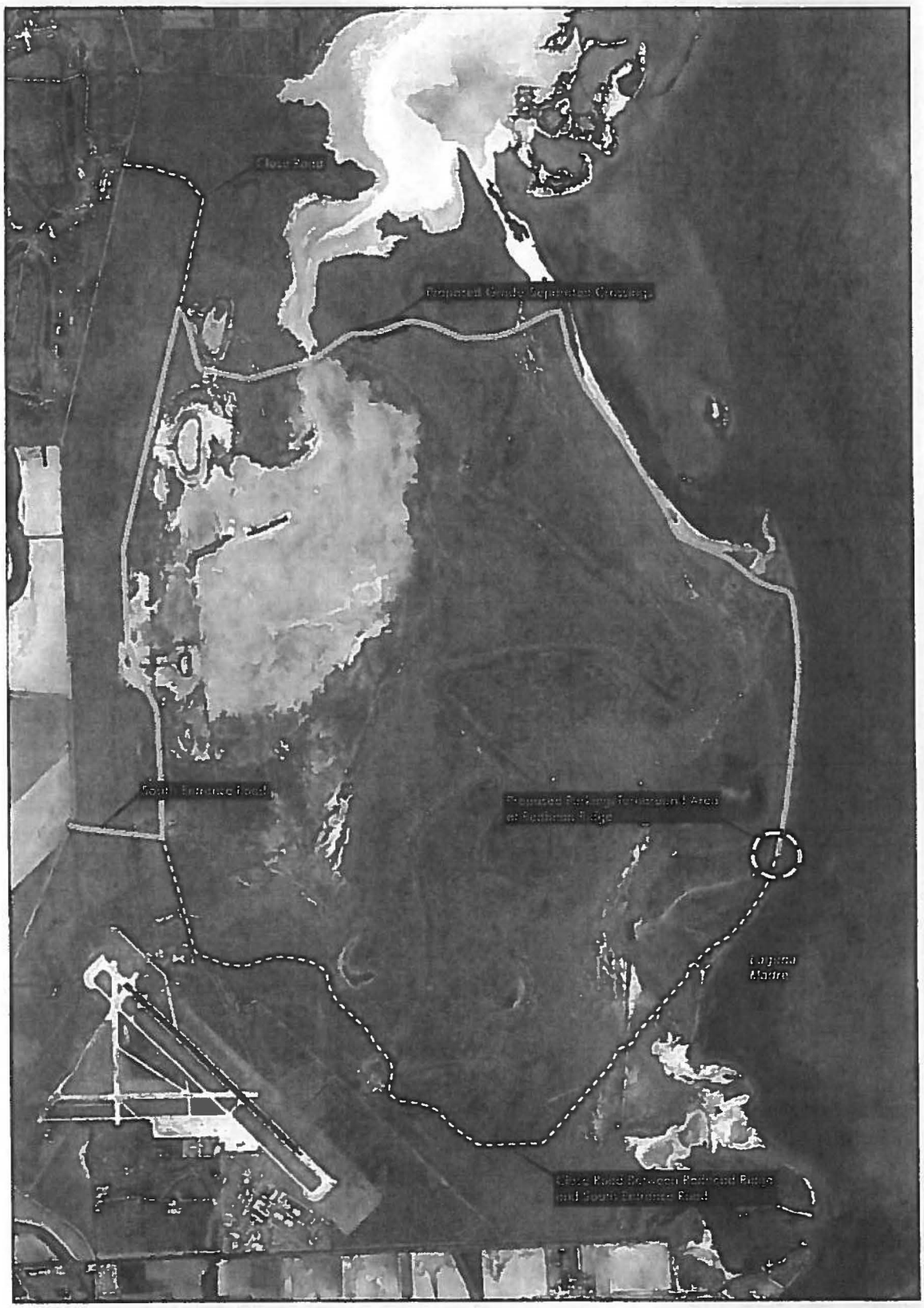
Ernesto Reyna Jr. — 8/28/14

Signature — date

[Title/office of reviewing supervisor]

Fish and Wildlife Biologist

Bayside Wildlife Drive Alternative 2



Appendix C
Parties Contacted During Scoping

Agencies and organizations contacted to assist in identifying issues and providing an opportunity to review or comment on this EA include, but are not limited to, the following:

Federal Agencies
Senator John Cornyn
Senator Kay Bailey Hutchison
Mary Beth Van Pelt, Environmental Scientist – EPA, Gulf of Mexico Program Office
Superintendent, Palo Alto Battlefield NHS
U.S. Army Corps of Engineers - Galveston District
NOAA Fisheries Restn. Ctr, SE Region
ICE - Port Isabel Detention Center
USDA-NRCS, San Benito, TX
Oz Longoria, USDA-NRCS
District Supervisor, USDA-APHIS Wildlife Services
State Conservationist, USDA-NRCS
State Resource Conservationist, USDA-NRCS

State Agencies
Carter Smith, Executive Director, Texas Parks and Wildlife Department
Russell Hooten, TPWD
Texas Parks & Wildlife Department, Brownsville, TX
Kathy Boydston, TPWD - Wildlife Habitat Assessment Program
Mario Jorge, P.E., District Engineer, Texas Department of Transportation
Texas Commission on Environmental Quality, Harlingen, TX
Bureau of Economic Geology, Austin, TX
Texas General Land Office, Coastal Resources Program
Executive Director, Texas Farm Bureau
Texas Water Development Board
Local Agencies
The Honorable Simon Salinas, Willacy County Judge
The Honorable Gilberto Hinojosa, Cameron County Judge
John H. Treviño, Staff Assistant, the Honorable Solomon P. Ortiz
The Honorable Ruben Hinojosa, Edinburg, TX 78539
The Honorable Ciro D. Rodriguez, Washington DC
The Honorable Eddie Lucio, Brownsville, TX
The Honorable Rene Oliveira, Brownsville, TX
The Honorable Eddie Lucio III, San Benito, TX 78586
Commissioner Israel Tamez, Willacy County
Office of the Mayor, City of Brownsville
Mark Lund, Director, Brownsville MPO
Office of the Mayor, City of Los Fresnos
Office of the Mayor, City of Port Isabel
Office of the Mayor, City of Laguna Vista
Office of the Mayor, City of Raymondville
Office of the Mayor, City of Rio Hondo
Office of the Mayor, City of San Benito

Office of the Mayor, Town of South Padre Island
Office of the Mayor, City of Harlingen
Brownsville Convention and Visitor's Bureau
South Padre Island Chamber of Commerce
Brownsville Chamber of Commerce
Harlingen Chamber of Commerce
Los Fresnos Chamber of Commerce
Port Isabel Chamber of Commerce
Port Mansfield Chamber of Commerce
San Benito Chamber of Commerce
South Padre Island Convention Centre
Director, Brownsville Economic Dev. Council
Manager, Harlingen Irrigation Dist. #1
Manager, Bayview Irrigation Dist #11
East Rio Hondo Water Supply Corp.
Cameron County Irrigation Dist. #2
Port Director, Port of Brownsville
Willacy County Navigation District
W.G. Palmer, Jr., Port Director, Port of Harlingen Authority

Organizations and Businesses
Martin Hagne – Director, Valley Nature Center
The Nature Conservancy
Environmental Defense
Dr. Jude A. Benavides / Dr. Elizabeth A. Heise, Chemistry and Environmental Sciences Dept.
World Birding Center, South Padre Island
Point Isabel ISD
George & Scarlett Colley, SPI Dolphin Res. and Sea Life Center
Jeff George, Sea Turtle, Inc.
Walter and Nancy Kittelberger, Lower Laguna Madre Foundation
Executive Director, Valley Proud Environmental Council
Patrick M. Burchfield, Gladys Porter Zoo
Sierra Club - Lone Star Chapter
Acting Director, Univ. of Texas-Pan American-Coastal Studies Lab
Bob Simpson – President, The Valley Land Fund
Audubon Society, TX State Office
Lawrence V. Lof, Gorgas Science Foundation
Coastal Conservation Association Texas
Dr. Frank Dirrigl, Jr., Biology Dept. Univ. of Texas Pan Am
Mary Jane Shands, Dir., JASON Project, University of Texas at Brownsville
Arturo Caso, Caeser Kleberg Wildl. Res. Institute-TX A&M Univ.
Dr. Genaro Lopez, Biology Dept. Brownsville, TX
Thor Lassen - Ocean Trust, Reston, VA
President, Coastal Conservation Assn.
The Nature Conservancy
John S.C. Herron, Nature Conservancy- Conservation Programs

Margo Zdravkovic, Conservian, Big Pine Key, FL
Regional Biologist, Ducks Unlimited, TX Field Office
Public Information Department, Brownsville Public Utilities Board
Javier Mendez – Director, Cameron County Park System
Port Isabel-Cameron County Airport
Brownsville Public Library System
Harlingen Public Library
Laguna Vista Public Library
Los Fresnos Public Library
Port Isabel Public Library
Willacy County Library/Reber Memorial Library
San Benito Public Library
Public Notices, Rio Hondo Post Office
Public Notices, Los Fresnos Post Office
Doug Hardie, Valley Morning Star
Brownsville Herald
The Monitor, McAllen, TX
Port Isabel - South Padre Press
Texas and Southwestern Cattle Raisers Assn.
Yturria Land and Cattle Co.
Harlingen Shrimp Farms
Guy Huddleston, Southern Texas Title Company

Individuals
Approximately 160 individual stakeholders were notified by mail and by email.

Laguna Atascosa National Wildlife Refuge

22817 Ocelot Road
Los Fresnos, TX 78566
956/748-3607

email: FW2_RW_Laguna@fws.gov
website: http://www.fws.gov/refuge/Laguna_Atascosa/

For Relay Service Connection
TTY/Voice: 711

U.S. Fish & Wildlife Service
http://www.fws.gov

For Refuge Information
1 800/344 WILD

September 2014